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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,432	01/15/2002	Charles W. Monagle	CEN0015-01	6080

832 7590 09/23/2003

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EXAMINER

COE, SUSAN D

ART UNIT	PAPER NUMBER
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1654

DATE MAILED: 09/23/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

FILE COPY

Office Action Summary

Applicati n N .

10/050,432

Applicant(s)

MONAGLE ET AL.

Examiner

Susan Coe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5 & 6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed June 19, 2003 has been received and entered.
2. Claims 35-63 have been cancelled.
3. Claims 22-34 are currently pending and are examined on the merits.

Election/Restrictions

4. Applicant has cancelled non-elected claims 35-63 in response to the restriction requirement of May 20, 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 22, 24, 25, 28, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. No. 4,410,554.

Applicant's claims are drawn to a soy protein product with a protein content between 60 to 85 weight % of total dry matter and a Nitrogen Solubility Index (NSI) between about 50 and 100 and has the ability to form a gel under heat treatment. The integrity of the gel is not diminished in the presence of salt. Applicant's specification measures this integrity according to parameters set out in Example 7. The soy protein product is used in meat products.

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US '554 teaches a soy protein product that has a NSI of at least 70. This product is able to form a gel on heating and maintains the gel in the presence of salt (see claim 1, lines 62-66). A specific example of the protein product is taught to have an NSI of 82 and a protein content of 72.8% of total dry matter (see Example 2). This protein product forms a gel when heated at temperatures of 70°C followed by 100°C (see Example 4). The reference teaches using the protein product in meat products (see Example 6).

The NSI of 82 for the product of Example 2 is considered to anticipate applicant's claim 25 because 82 is considered to reasonably fall within applicant's limitation of "about 85." MPEP section 2173.05(b) states that the use of "about" in a claim is a clear but flexible limitation. A difference of 3 NSI is only a 3.5% difference which reasonably falls within this flexible region.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 22 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 4,410,554 in view of US Pat. No. 4,322,344.

Applicant's claims are drawn to a soy protein product with a protein content between 60 to 85 weight % of total dry matter, a Nitrogen Solubility Index (NSI) between about 50 and 100, and has the ability to form a gel under heat treatment. The integrity of the gel is not diminished in the presence of salt. The soy protein protein product is used as a meat analog.

As discussed above in paragraph 5, US '554 teaches a soy protein product with a NSI between 50 and 100, a protein content of 72.8%, and the same gel forming abilities as those claimed by applicant. However, US '554 does not teach using the protein product as a meat analog.

US '344 teaches that at the time of the invention soy proteins were routinely used in meat analog products (see column 1, lines 19-26). Therefore, at the time of the invention, a person of ordinary skill in the art would have known that soy protein products could successfully be used as meat analogs. Thus, a person of ordinary skill in the art would have been motivated to use the soy protein product of US '554 as a meat analog because this is a known use of soy protein products.

7. Claims 22, 26, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 4,410,554 in view of US Pat. No. 4,346,122.

Applicant's claims are drawn to a soy protein product with a protein content between 60 to 85 weight % of total dry matter, a Nitrogen Solubility Index (NSI) between about 50 and 100,

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and has the ability to form a gel under heat treatment. The integrity of the gel is not diminished in the presence of salt. A 10 % weight dispersion of the protein product in water has a viscosity of less than 50 or 30 centipoise.

As discussed above in paragraph 5, US '554 teaches a soy protein product with a NSI between 50 and 100, a protein content of 72.8%, and the same gel forming abilities as those claimed by applicant. However, US '554 does not teach that the protein product has the viscosities claimed by applicant.

US '122 teaches that it is desirable to lower the viscosity of soy protein products in order to use them in a wider variety of products. The lower viscosities allows the protein products to be used as complete or partial replacements for milk and eggs and as a meat injection brine (see column 3, lines 20-34; column 10, lines 50-65; and Example 7). US '122 teaches that the viscosity of soy protein products can be modified by changing the temperatures and times at which proteins are extracted (see column 6, line 45-column 7, line 2). Thus, based on this teaching, a person of ordinary skill in the art would have reasonably expected that decreasing the viscosity of the protein product of US '554 would have the benefit of allowing the product of US '554 to be used in a wider variety of products, such as a meat injection brine. Therefore, knowing these benefits, a person of ordinary skill in the art would be motivated to lower the viscosity of the protein product taught by US '554 in the manner taught by US '122.

8. Claims 22, 23, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 4,410,554 in view of US Pat. No. 6,355,295 B1.

Applicant's claims are drawn to a soy protein product with a protein content between 60 to 85 weight % of total dry matter, a Nitrogen Solubility Index (NSI) between about 50 and 100,

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and has the ability to form a gel under heat treatment. The integrity of the gel is not diminished in the presence of salt. The protein product has a soluble sugar content of between 6 to 20 weight % of total dry weight.

As discussed above in paragraph 5, US '554 teaches a soy protein product with a NSI between 50 and 100, a protein content of 72.8%, and the same gel forming abilities as those claimed by applicant. However, US '554 does not teach that the protein product has the soluble sugar content claimed by applicant.

US '295 teaches that the amount of soluble sugars in a soy protein product can be varied by adjusting the pH of the extraction of the starting soy material (see column 2, lines 35- 49).

US '295 teaches that it is desirable to have a soy protein product that contains sucrose to improve the taste and functionality of the product (see column 15, lines 50-55). Therefore, US '295 teaches that it is desirable to adjust the amount of soluble sugar in a soy protein product to improve its characteristics. Based on this teaching, a person of ordinary skill in the art would be motivated to modify the sugar content of the protein product taught by US '554 in the manner taught by US '295 in order to improve the product's taste and functionality.

9. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 4,410,554 in view of US Pat. No. 6,355,295 B1 as applied to claims 22, 23, 32, and 33 above, and further in view of US Pat. No. 4,346,122.

Applicant's claim 34 is drawn to a soy protein product with a protein content between 60 to 85 weight % of total dry matter, a Nitrogen Solubility Index (NSI) between about 50 and 100 and has the ability to form a gel under heat treatment. The integrity of the gel is not diminished in the presence of salt. The protein product has a soluble sugar content of between 6 to 20

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weight % of total dry weight. A 10 % weight dispersion of the protein product in water has a viscosity of less than 50 centipoise.

As discussed above in paragraph 8, the combination of US '554 and US '295 is considered to teach a soy protein product with a NSI between 50 and 100, a protein content of 72.8%, the same gel forming abilities as those claimed by applicant, and the soluble sugar content claimed by applicant. However, the references do not teach that the protein product has the viscosity claimed by applicant.

US '122 teaches that it is desirable to lower the viscosity of soy protein products in order to use them in a wider variety of products. The lower viscosities allows the protein products to be used as complete or partial replacements for milk and eggs and as a meat injection brine (see column 3, lines 20-34; column 10, lines 50-65; and Example 7). US '122 teaches that the viscosity of soy protein products can be modified by changing the temperatures and times at which proteins are extracted (see column 6, line 45-column 7, line 2). Thus, based on this teaching, a person of ordinary skill in the art would have reasonably expected that decreasing the viscosity protein product made by the combination of US '554 and US '295 would have the benefit of allowing the product of US '554 and US '295 to be used in a wider variety of products, such as a meat injection brine. Therefore, knowing these benefits, a person of ordinary skill in the art would be motivated to lower the viscosity of the protein product taught by the combination of US '554 and US '295 in the manner taught by US '122.

10. No claims are allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Coe whose telephone number is (703) 306-5823. The examiner can normally be reached on Monday to Thursday from 8:00 to 5:30 and on alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback, can be reached on (703) 306-3220. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

A handwritten signature in cursive script, appearing to read "Susan Coe".

Susan Coe, Examiner

September 22, 2003